

WHAT IS CLAIMED IS:

1.           A drive unit comprising:  
              a primary side comprising a magnetic body  
around which a coil is wound; and  
              a secondary side comprising a plurality of  
permanent magnets, an irregular magnetic plate, or a  
conductor plate; wherein  
              the primary side includes a magnetic pole in  
which a step portion is provided.
2.           A drive unit comprising:  
              a first core having first opposed portions;  
              a second core having second opposed portions;  
              a primary side including the first core and  
the second core, around which primary side a coil is  
wound; and  
              a secondary side disposed between the first  
opposed portions and between the second opposed  
portions; wherein  
              the primary side is provided with a step  
portion.
3.           A drive unit comprising:  
              a first core having first opposed portions;  
              a second core having second opposed portions;  
              a primary side including the first core and  
the second core, around which primary side a coil is  
wound; and  
              a secondary side disposed between the first  
opposed portions and between the second opposed

portions; wherein

at least one of the first opposed portions and the second opposed portions is provided with a step portion.

4. The drive unit according to claim 1, wherein the height of the step portion is larger than the distance of an air gap between the primary side and the secondary side.

5. The drive unit according to claim 2, wherein the height of the step portion is larger than the distance of an air gap between the primary side and the secondary side.

6. The drive unit according to claim 3, wherein the height of the step portion is larger than the distance of an air gap between the primary side and the secondary side.

7. The drive unit according to claim 2, wherein each of the first core and the second core comprises an upper magnetic pole tooth and a lower magnetic pole tooth, the height of the step portion being smaller than the width of the upper magnetic pole tooth or the lower magnetic pole tooth.

8. The drive unit according to claim 3, wherein each of the first core and the second core comprises an upper magnetic pole tooth and a lower magnetic pole tooth, the height of the step portion being smaller than the width of the upper magnetic pole tooth or the lower magnetic pole tooth.

9. The drive unit according to claim 1, wherein the secondary side comprises a permanent magnet, the width of the step portion being smaller than the width of the permanent magnet.
10. The drive unit according to claim 2, wherein the secondary side comprises a permanent magnet, the width of the step portion being smaller than the width of the permanent magnet.
11. The drive unit according to claim 3, wherein the secondary side comprises a permanent magnet, the width of the step portion being smaller than the width of the permanent magnet.
12. The drive unit according to claim 3, wherein each of the first core and the second core comprises an upper magnetic pole tooth and a lower magnetic pole tooth,  
the secondary side comprises a permanent magnet,  
the step portion comprises a protrusion provided on the upper magnetic pole tooth or and a lower magnetic pole tooth so as to protrude therefrom toward the secondary side, the height of the protrusion being smaller than the widths of the upper magnetic pole tooth and the lower magnetic pole tooth, the width of the protrusion being smaller than the width of the permanent magnet.